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# People Capability Maturity Model® (P–CMM®)

## Version 2.0

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FOR THE COMMANDER

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# Preface

## The Need for an Agile Workforce

Organizations are now competing in two markets, one for their products and services and one for the talent required to produce or perform them. An organization's success in its business markets is determined by its success in the talent market. At the very time that business markets are expanding, talent markets seem to be shrinking. As the knowledge required to build products and deliver services increases, the retention of experienced employees becomes critical to improving productivity and time to market. In areas such as software development and nursing, the shortage of talent is so great that companies are beginning to offer incentives that were once only available to executives or professional athletes. In every domain of business, executives know that their ability to compete is directly related to their ability to attract, develop, motivate, organize, and retain talented people.

Yet the people-related challenges of the business stretch far beyond recruiting and retention. Competing for talent and recruiting the best is not enough, and focusing just on winning the "talent wars" can be damaging to the organization [Pfeffer 01]. As agility in responding to continual change in technological and business conditions has become critical to success, organizations must strive to create learning environments capable of rapidly adjusting to the changes engulfing them. A critical component of agility is a workforce with the knowledge and skills to make rapid adjustments and the willingness to acquire new competencies. In fact, an agile workforce may reduce some of the stress currently being experienced as a talent shortage.

Organizations have attempted to apply many different techniques in their efforts to move towards strategic human capital management. They combine downsizing with restructuring, apply reengineering or process improvement, improve information sharing, clearly communicate the organization's mission, institute employee involvement programs, establish formal complaint resolution procedures, institute gain-sharing or other incentive plans, emphasize the importance of training the workforce, formalize performance management and feedback processes, perform job or work analysis and design, support job rotation, begin to establish


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team-based work designs, retrain employees to meet changing demands, provide flexible work arrangements, address diversity issues, conduct formal mentoring programs, and align business and human resources strategies [Mirvis 97, Becker 98, Becker 96]. What many organizations lack is a framework for implementing these advanced practices.

### People Capability Maturity Model® Framework

The People Capability Maturity Model® (People CMM®) is a tool that helps you successfully address the critical people issues in your organization. The People CMM employs the process maturity framework of the highly successful *Capability Maturity Model® for Software* (SW-CMM®) [Paulk 95] as a foundation for a model of best practices for managing and developing an organization's workforce. The Software CMM has been used by software organizations around the world for guiding dramatic improvements in their ability to improve productivity and quality, reduce costs and time to market, and increase customer satisfaction. Based on the best current practices in fields such as human resources, knowledge management, and organizational development, the People CMM guides organizations in improving their processes for managing and developing their workforce. The People CMM helps organizations characterize the maturity of their workforce practices, establish a program of continuous workforce development, set priorities for improvement actions, integrate workforce development with process improvement, and establish a culture of excellence. Since its release in 1995, thousands of copies of the People CMM have been distributed, and it is used world-wide by organizations, small and large, such as IBM, Boeing, BAESystems, Tata Consultancy Services, Ericsson, Lockheed Martin and QAI (India) Ltd.

The People CMM consists of five maturity levels that establish successive foundations for continuously improving individual competencies, developing effective teams, motivating improved performance, and shaping the workforce the organization needs to accomplish its future business plans. Each maturity level is a well-defined evolutionary plateau that institutionalizes new capabilities for developing the organization's workforce. By following the maturity framework, an organization can avoid introducing workforce practices that its employees are unprepared to implement effectively.

### Structure of This Document

This document describes the People CMM, the key practices that constitute each of its maturity levels, and information on how to apply it in guiding organizational improvements. It describes an organization's capability for developing its workforce at each maturity level. It describes how the People CMM can be applied as a standard for assessing workforce practices and as a guide in planning and implementing improvement activities. This document

provides guidance on how to interpret its practices. It also presents case studies of organizations that have used the People CMM.

The first part of the document describes the rationale and evolution of the People CMM, the concepts of process maturity, the structure of the model, how to interpret the model's practices, and case studies of results. The second part of the document contains the key practices of the People CMM— the individual, managerial, and organizational practices that contribute to maturing workforce capability. These practices describe an evolutionary improvement path from ad hoc, inconsistently performed practices, to a mature, disciplined development of workforce competencies, just as the CMM for Software describes an evolutionary improvement path for the software processes within an organization. The third and final part of this document contains the appendices. Each of these parts of the document is described in the following paragraphs.

### The Content of the People CMM

Part One of the People CMM consists of six chapters:

- ❑ Chapter 1: The Process Maturity Framework chapter offers a broad view of the model, describes how the People CMM establishes an integrated system of workforce practices that matures through increasing alignment with the organization's business objectives, performance, and changing needs; and provides a background on the process maturity framework adopted by the People CMM.
- ❑ Chapter 2: Overview of the People CMM describes the maturity levels, or evolutionary plateaus at which the organization's practices have been transformed to achieve a new level of organizational capability, and presents a description of characteristic behavior of organizations at each maturity level.
- ❑ Chapter 3: The People CMM Process Areas chapter introduces the process areas in the model.
- ❑ Chapter 4: The Architecture of the Model chapter describes the components of the model, including maturity levels, goals, and practices, which ensure that the implementation of process areas is effective, repeatable, and lasting. It introduces the typographical conventions used throughout the model.
- ❑ Chapter 5: The Interpreting the Model chapter provides insight into the meaning of the model for your organization.
- ❑ Chapter 6: The Using the Model chapter explains the ways in which your organization can use the model.

Part Two contains the Process Areas of the People Capability Maturity Model. Part Two describes the practices that correspond to each maturity level in the People CMM. It is an

elaboration of what is meant by maturity at each level of the People CMM and a guide that can be used for organizational improvement and assessment. For those who want to get a quick sense of the practices, without the rigor that is needed in applying them, an abridgment of the practices is provided in Appendix D.

Each maturity level provides a layer in the foundation for continuous improvement of the organization's workforce capability. Achieving each level of the maturity model institutionalizes a different component of workforce capability, resulting in an overall increase in the workforce capability of the organization. Each process area comprises a set of goals that, when satisfied, stabilize an important component of workforce capability. Each process area is described in terms of the practices that contribute to satisfying its goals. The practices describe the infrastructure and activities that contribute most to the effective implementation and institutionalization of the process area.

Each section in Part Two presents the process areas within each of these maturity levels:

- ❏ Process Areas for Maturity Level 2: Managed
- ❏ Process Areas for Maturity Level 3: Defined
- ❏ Process Areas for Maturity Level 4: Predictable
- ❏ Process Areas for Maturity Level 5: Optimizing

The five Appendices of the People CMM are as follows:

- ❏ Appendix A: The References appendix provides full citations to any information cited in the People CMM.
- ❏ Appendix B: The Acronym List appendix defines acronyms used in the People CMM.
- ❏ Appendix C: The Glossary appendix defines terms used in the People CMM that are not adequately defined in the context of this model by the Webster's American English dictionary.
- ❏ Appendix D: The Practice-to-Goal Mappings for People CMM Process Areas describes the People CMM, the maturity levels and the process areas that correspond to each maturity level of the P-CMM, and the goals and practices in each process area. No informative material is given other than the process area purpose, goals, and practices. This view of the model is convenient when you want to quickly understand the content and flow of large portions of the model or are intimately familiar with it.
- ❏ Appendix E: The Change History appendix provides a historical view of the People CMM in its earlier releases.

## Audience

This document is targeted to anyone involved in the workplace, but especially at those responsible for managing or developing the workforce, implementing advanced workforce practices, nurturing teams, or transforming organizational culture. This document is especially useful for a business undergoing critical organizational changes such as downsizing, a merger, rapid growth, or change in ownership. It is useful to managers and supervisors who want guidance for managing their people. It is useful to individuals trying to improve the workforce practices of their organizations, as well as to those attempting to assess the maturity of these practices in organizations.

This document complements Watts Humphrey's *Managing Technical People* [Humphrey 97a] by formalizing and expanding the maturity framework described in that book. It also complements the *Capability Maturity Model for Software* [Paulk 95] by addressing the workforce improvement practices necessary to ensure long-term continuous improvement. While the People CMM complements the *Capability Maturity Model for Software*, its applicability is not limited to software-intensive organizations. The practices of the People CMM can be applied in any organization, regardless of its business focus, size, or location.

This document does not describe all of the work being done by the authors or the Software Engineering Process Management Program of the Software Engineering Institute (SEI). For instance, the SEI supports a People CMM Lead Assessor track within the SEI Appraiser program to ensure an adequate supply of experts for conducting People CMM-based assessments. For further information regarding the SEI, its work with CMMs, or any of its associated products, contact:

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The SEI maintains a listing of authorized People CMM Lead Assessors on its Web site. See http://www.sei.cmu.edu/managing/pcmm-listing.html

For more information about the People CMM Lead Assessor Program or training on the People CMM, contact:

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### Feedback Information

The People CMM is a living document, shaped by the needs of organizations' rapidly evolving workplaces. Over four hundred change requests helped shape this version of the People CMM.

The SEI continues to solicit feedback from its customers. We are very interested in your ideas for improving these products. You can help these products continually improve.

See the SEI Web site for information on how to provide feedback:

**http://www.sei.cmu.edu/cmm-p/**

Instructions for requesting changes to the People CMM and a change request form are also contained in Appendix E. Change requests can be submitted by email to:

**p-cmm-change@sei.cmu.edu**

# Acknowledgements


### Leadership in Process Improvement

The People Capability Maturity Model® (P-CMM®) draws on the topics of capability maturity models, benchmark high performance workforce practices, and organizational improvement to increase an organization's workforce capability; and presents a documented roadmap for organizational improvement.

For his contributions and guidance as the leader of the Capability Maturity Models® (CMM®) project at the Software Engineering Institute, his broad contributions to our ongoing discussions regarding the evolving drafts of the P-CMM, and his continuing support for the P-CMM efforts, we thank Mike Konrad. Watts Humphrey contributed to many discussions that led to the development and refinement of the model. The extraordinary efforts of Mark Paulk in the development of the Capability Maturity Model for Software established a world-class standard and enabled the P-CMM to build on these efforts. We thank them for their contributions.

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### Reviewers

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We would like to thank especially those numerous individuals and organizations from the United States, Canada, Europe, Australia, and India who have used the People CMM to guide and conduct organizational improvement activities. Since its release in 1995, thousands of copies of the People CMM have been distributed, and it has been used world-wide by commercial organizations, small and large, such as IBM Global Services, Boeing, BAE Systems, Tata Consultancy Services, Ericsson, Lockheed Martin Mission Systems, QAI (India) Ltd., RS Software (India) Ltd., Mastek Limited (IT), and by government organizations, such as the U.S. Army. Adoption rates for the People CMM appear to be highest in India. High maturity organizations using the People CMM in India include CG Smith, Cognizant, i-Flex, IBM Global Services India, Mastek Limited (IT), and Tata Consultancy Services. High maturity organizations using the People CMM in the U.S. include Lockheed Martin, Boeing, and AIS,

the winner of the 1999 IEEE Computer Society Software Process Achievement Award. [Paulk 01, Boeing 01, Ferguson 99, Seshagiri 00]. According to a recent survey of high-maturity software organizations, over 40% of these Level 4 and Level 5 organizations, as measured by the Software CMM, are also using the People CMM.

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